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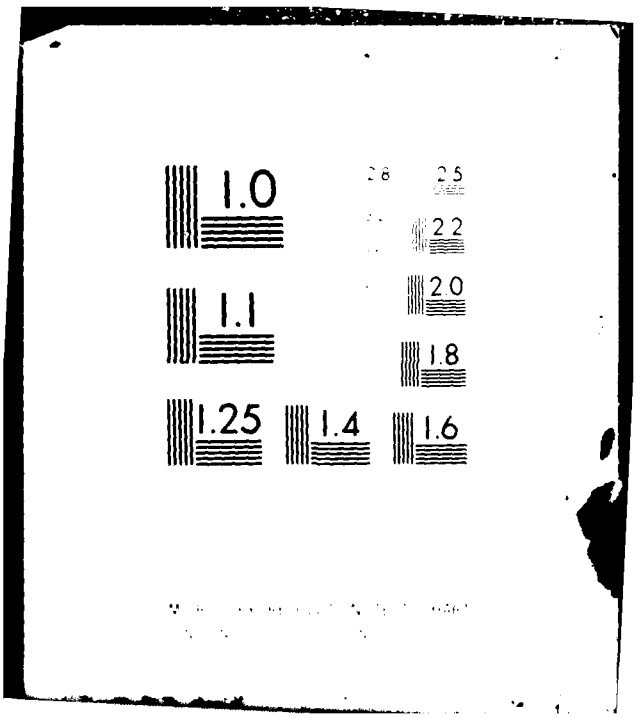
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UNITED STATES GENERAL ACCOUNTING OFFICE
WASHINGTON, DC 20548

Date - Dec 1981

Real Admiral A. A. Giordano
Commander, Naval Supply Systems Command

Subject: The Aviation Supply Office Continues To Have Problems With the Accuracy of Its Requirements Determinations (PLRD-82-26)

Dear Admiral Giordano:

We have completed our review of Navy requirements determinations for aeronautical spares and repair parts at the Aviation Supply Office (ASO) in Philadelphia, Pennsylvania. This report discusses ASO's problems in accurately determining parts requirements.

We also reviewed the Navy's techniques for forecasting leadtimes and demands. The Navy has used some innovative techniques to identify data trends and to forecast leadtime and demands. We believe these techniques may be adaptable to other Department of Defense requirements determination systems. Our views, conclusions, and recommendations on this matter have been presented in a separate report to the Secretary of Defense entitled "The Services Should Improve Their Processes For Determining Requirements For Supplies And Spare Parts" (PLRD-82-12, Nov. 30, 1981).

BACKGROUND

ASO provides logistics support for about 4,400 operating Navy and Marine aircraft valued at more than $14 billion. It uses the Navy's Uniform Inventory Control Point computer program to manage about 280,000 items with an inventory valued at $4.5 billion. ASO annually procures over $1 billion in spare parts and assemblies and employs over 2,400 people, including about 380 inventory managers, to carry out its inventory management functions.

We randomly selected 100 items from a universe of 2,611 reparable and consumable items recommended for purchase as of May 4, 1980, and tested the accuracy of the data elements used in determining these requirements. Using the results of our review of the sample items, we developed projections at a 95-percent confidence level.

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Of the 100 randomly selected items, we reviewed 50 with supporting documentation to assess the validity and reasonableness of the requirements determinations. Similar records were not available for the remaining 50; therefore, we could not verify these computations. We did, however, obtain comments from inventory managers and other officials on changes made to requirements computations and on the disposition of recommended actions for these items.

We also reviewed Defense, Navy, and ASO directives and instructions and studies made by the Defense Audit Service and the Naval Audit Service. Upon conclusion of the review, we discussed the results with ASO officials and incorporated their comments in the report as appropriate.

SUMMARY OF RESULTS

ASO continues to have major problems with the accuracy of its requirements determinations. Its automated requirements system contains vast amounts of invalid data, which has caused requirements to be significantly overstated. As a result, extensive manual adjustments are needed before data can be used for determining what items and how many to buy. For example, the automated requirements system computed buy requirements during the May 4, 1980, cycle totaling $495 million. However, after manual adjustments, the inventory managers reduced the buy requirements to $26 million--a $469 million reduction.

While we did not find significant discrepancies in the adjustments made by inventory managers, we did identify the primary reasons for the poor quality of system-generated data. Basically, the invalid system data resulted because

--available assets were not reported to ASO in a timely manner,

--the data base for certain items was fragmented,

--access to files for inputting requirements data was not controlled,

--inventory managers' data changes were not reviewed,

--coordination among various ASO divisions was lacking,

--updating of due-in files was not timely, and

--inventory managers did not review recommended procurement actions in a timely manner.

Additionally, because of the amount of inaccurate data in the requirements system, we question the validity of the budget, which is based on this data. The above areas are discussed in detail in the enclosure.

Since 1975, GAO, the Defense Audit Service, and the Naval Audit Service have reported similar types of deficiencies in the Navy's requirements system. Because the Navy has taken or has planned actions to correct some of these deficiencies and to improve the quality of its file data, we are not making recommendations now. However, we plan to monitor the Navy's efforts to improve the credibility of its requirements determination system.

We appreciate the cooperation shown to our staff by ASO officials and would like to receive your comments on the matters discussed in this report. Copies of the report are being sent to the Secretary of Defense and the Secretary of the Navy.

Sincerely yours,

Henry W. Connor
Senior Associate Director

Enclosure

REASONS FOR INVALID SYSTEM REQUIREMENTS DETERMINATIONS AT ASO

AVAILABLE ASSETS NOT REPORTED TO ASO IN A TIMELY MANNER

Untimely reporting of assets by field activities is a significant factor in the overstatement of requirements and continues to be a supply discipline and accountability problem at ASO. Because of this, the item manager's visibility of system assets is impaired and managers must rely heavily on manual records when determining requirements.

Numerous reporting activities provide asset information to ASO at different time intervals. For example, 35 supply activities report transactions and onhand assets daily. However, about 100 field reporting activities report asset balances quarterly. Therefore, data could be as much as 90 days old when used in requirements computations.

In addition, asset data on items in the Closed Loop Aeronautical Management Program (CLAMP), a separately managed program for about 13,500 expensive and high volume, mission-critical reparable items, is reported to ASO at varying times--ranging from weekly to monthly. ASO updates its master data files with this data, and, in turn, uses it to determine requirements.

Inventory managers frequently made changes to the requirements computations because the reported data was outdated or inaccurate. The managers made the most changes to CLAMP items in order to compensate for the outdated or inaccurate data.

The managers are required to recompute all CLAMP requirements using the "total approach method." Under this method, inventory managers manually develop a history and reconciliation on each item, considering such factors as how many items were initially issued, how many were subsequently bought, and how many have left the system (losses, disposals, etc.). We found that inventory managers rejected 21 of the 22 recommended buys for CLAMP items because of errors in asset data. When projected to the universe of sample items, we estimated that deleted CLAMP buys amounted to $124 million.

ASO stock control officials acknowledged that the untimely reporting of available assets seriously affected the accuracy of the data files. They said many of the assets errors were caused by the multiple CLAMP reporting systems.

DATA BASE FOR CLAMP ITEMS IS FRAGMENTED

Until recently, CLAMP items were managed outside of the normal Uniform Inventory Control Point (UICP) system. Basically, the CLAMP system was an off-line system and used a mix of manual and automated techniques for processing requisitions and for reporting essential data from field activities to ASO. No central data base was established for CLAMP and various segments of the data base were maintained by a contractor, Navy wholesale storage sites, and ASO. To update its master data files, ASO mechanically created asset and demand transactions and backorders with the information it received. CLAMP's fragmented data base and cumbersome and untimely update methods resulted in data omissions and duplications. Furthermore, these data errors profoundly affected the budgeting for and procurement of materials.

ASO recognized that the reporting systems were causing gross inaccuracies in its financial, stratification, and budget data submissions. Additionally, ASO was concerned with its inability to reconcile backorders for CLAMP items, which it believed resulted in understated budgets.

In April 1980, ASO implemented the Uniform CLAMP (U-CLAMP) system which was designed to overcome the shortcomings of CLAMP and to provide a single point of entry for transactions. This system allowed ASO to update its files on a transaction-by-transaction basis. However, 1 year after implementation of U-CLAMP, ASO continued to have significant problems with the reliability of its data. Inventory managers distrusted the data received from the U-CLAMP system and relied heavily on manual records and other external data sources.

At the time of our review, ASO officials believed that the asset data was not fully reliable but that its accuracy had improved somewhat. Officials attributed many of the data problems to the U-CLAMP transaction reporting system. To rectify the problem, the Navy's Fleet Materiel Support Office is making certain program changes to the U-CLAMP system. In addition, ASO has scheduled complete inventories at its field reporting activities.

Because of these ongoing changes, we did not evaluate the effectiveness of the U-CLAMP system. In our opinion, however, these changes should help alleviate many of the problems currently being experienced.

ACCESS TO FILES FOR INPUTTING
REQUIREMENTS DATA IS NOT CONTROLLED

ASO does not sufficiently control data input to its files. File changes may be made at any time to program data, onhand and due-in assets, demand data, planned allowances, etc. Inventory, budget, procurement, retail operations, system development, and other ASO personnel have uncontrolled access to the data files and make numerous data changes that are neither centrally processed nor centrally validated. Statistics developed by the quality assurance section and the internal review branch for a recent 4- to 6-week period showed that about 5,000 direct terminal inputs and about 18,000 file changes were made through input documents.

Our review showed that invalid changes have resulted in inaccurate requirements and overstated procurements. The recommended buys for six items, 1/ initially in our selected sample, totaled $180 million, but the item manager deleted the recommended buys because of obvious invalid file changes. To illustrate, one item had a recommended procurement of 3,618 units with a $21 million value. The inventory manager deleted the recommended buy for the item because its program relationship code was invalid. ASO could not determine who was responsible for miscoding the item. This same item had been reviewed in detail 6 weeks previously and found to be accurately recorded with no procurement necessary.

ASO officials noted that uncontrolled access to the files significantly affected file data quality and agreed that effective controls were needed. They stated that the Fleet Materiel Support Office has been requested to make changes to the UICP system to restrict access to data files.

INVENTORY MANAGER
CHANGES NOT REVIEWED

All data changes made by inventory managers on recommended buys were supposed to be recorded on control documents and sent to a control group in the supply control division. However, before December 1980 the control group did not review the documents. Furthermore, computer listings of all data changes entered into the file were not analyzed to monitor the change actions and to identify the sources of invalid data. ASO officials told us that as of December 1980, the control group was to review inventory managers' changes to recommended buys and enter them into the data files.

1/These six items were deleted from the sample universe because the recommended buys were atypical and would distort any projections which included these items.

COORDINATION AMONG VARIOUS ASO DIVISIONS IS LACKING

A planned program requirement is a known or anticipated requirement that cannot be exactly predicted by the UICP forecasting technique. As of January 1981, ASO's master data file contained over 300,000 planned program requirements valued at $4.2 billion, of which $1.2 billion were funded.

Inventory managers rejected planned program requirements on several of our sample items because the requirements duplicated previously negotiated allowances established for initial outfittings at operating sites. On the basis of our analysis, we estimated that ASO's master data file contained $1.7 million of invalid planned program requirements.

The duplicate planned program requirements resulted primarily because of the lack of coordination among the divisions involved in making changes to the flying hour program. Flying hour data received from the Chief of Naval Operations were input into the requirements systems and new requirements were automatically computed and processed without first determining if authorized allowances had already been established at the operating sites. ASO officials said that new procedures are being developed to assure that authorized allowances are considered before new planned program requirements are established.

Another planned program requirement problem involves the processing of incremental increases in programed flying hours. The UICP system considered the flying hour increases as new requirements for the operating sites instead of as adjustments to current requirements, and as a result, planned program requirements were overstated. ASO officials recognized this problem as early as April 1977 and requested its system development division to make a program adjustment to correct the problem. However, as of June 1981 the system development division had not taken action to correct this deficiency. A division official told us he would discuss the matter with material budget division personnel and follow through on the requested program change.

UPDATING OF DUE-IN FILES IS NOT TIMELY

The asset due-in file contains inaccurate data because a backlog exists for posting updated information. Because of the timelag in updating files, due-in assets are understated and requirements are overstated by a corresponding amount. For example, inventory managers found that due-in assets for seven items in our sample were understated by over $779,000. When projected to the universe of items in the May 4, 1980, buy cycle, we estimate that total understated assets resulted in overstated buy requirements of $1.5 million.

ASO officials told us that postings to the due-in file for new contract quantities generally occur 10 to 14 days after the procurement is authorized, and that postings for increased contract quantities can require even more time because of delays in processing contract amendments and certifying the availability of funds. Because due-in quantities are not considered in the automated system until posted, inventory managers record these actions on their manually maintained procurement history cards and use this data when reviewing recommended procurements. Consequently, manual records are current, but the automated records are not. For example, a recommended buy of 139 coupling assemblies for $26,946 was deleted primarily because the inventory managers' record showed 119 units due-in which had not been posted to the automated file.

ASO officials said that the accuracy of the due-in file has been a longstanding problem. They told us that ASO recently (1) acquired new data entry equipment which allows direct entry onto tape from source documents and (2) established a central entry control unit to make all changes to the due-in file. The officials believe that these actions will improve the timeliness and accuracy of changes to the due-in file.

INVENTORY MANAGERS DO NOT REVIEW RECOMMENDED PROCUREMENT ACTIONS IN A TIMELY MANNER

Many computer-recommended procurements are automatically canceled because inventory managers do not review these actions within the 35-day period required by the UICP system. For example, 27 of our 100 sample recommended buys were canceled for this reason and we estimate that $153 million of the May 4, 1980, recommended buys were automatically canceled without review.

Inventory managers said that they were unable to review all recommended buys because of their heavy workload and because of delays in obtaining validating information from other ASO divisions. According to the managers, they screen the recommended buys and concentrate on those items that have the greatest procurement potential and for which sufficient funding is available.

Items not reviewed by the inventory managers are logged in by a control group in the stock control division, but the inventory managers are not required to justify reasons for not reviewing them. ASO stock control officials said that procedures would be established whereby the division's control group would monitor overdue actions and obtain justification for delays in reviewing system buy recommendations.

VALIDITY OF BUDGET
SUBMISSIONS IS QUESTIONABLE

The vast amount of inaccurate data in the requirements system raises serious questions about the accuracy and validity of the repair parts budget submission which is based on this data.

Budget submissions are based on semi-annual stratifications of projected requirements for material needed 18 months in the future. For example, the fiscal year 1982 budget submission was based on the March 1980 asset stratification. ASO's stratification program manipulates file data and computes requirements levels and arranges them in a priority sequence. The stratification program applies assets to these requirements levels. If the assets are not sufficient to meet the requirements, the program identifies the needed items to meet the requirements level. The total dollar value of the stock deficits then becomes the basis for the initial budget preparation.

Much of the data generated by the stratification program goes through a validation or scrubbing process. Selected items accounting for most of the total dollar value of projected procurements are reviewed by inventory managers for accuracy of the requirements computations. Necessary adjustments are then made to the stratification figures and data corrections are made through a central entry point. A Navy Headquarters' team reviews the stratification data before submitting it to ASO's budget division, which may make additional adjustments before sending the budget submission to Navy Headquarters.

ASO found numerous data errors and made huge dollar reductions to the stratification data. For example, the March 1980 initial stratification showed a budget requirement of $18.3 billion. However, the inventory managers' review identified 11,000 errors and reduced the requirement by $10.3 billion. The budget division also made an additional $58.5 million adjustment for unfunded/unauthorized data not purged from the March 1980 stratification total. The gross inaccuracies were primarily in the CLAMP reporting system.

Our review of the March 1980 budget data was thwarted because ASO lacked supporting records. We attempted to determine whether the data changes made by the inventory managers to the recommended buys in our sample were also made to the final March stratification before submission to the budget division. ASO officials said that the stratification data tape, which supports the fiscal year 1982 budget, was erased before our review. Consequently, we could not validate these changes.

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